405 KAR 30:280. Prime farmland.

RELATES TO: KRS 350.600
STATUTORY AUTHORITY: KRS 151.125, 224.033, 350.028, 350.050, 350.600
NECESSITY, FUNCTION, AND CONFORMITY: KRS 350.600 requires the Environmental and Public Protection Cabinet to develop administrative regulations for oil shale operations to minimize and prevent their adverse effects on the citizens and environment of the Commonwealth. This administrative regulation specifies definition, determination and special requirements for the removal, stockpiling and replacement of soil, and revegetation of prime farmland to assure its productivity for the production of food and fiber.

Section 1. Prime Farmland Definition. The criteria used by the United States Department of Agriculture, Soil Conservation Service for identification of prime farmland published in the Federal Register on August 23, 1977, is the basis of the definition for prime farmland to be used in these administrative regulations. The definition is based on soil characteristics and the terms used are defined in United States Department of Agriculture publications: Soil Taxonomy Agricultural Handbook 436; Soil Survey Manual, Agricultural Handbook 18; Rainfall-Erosion Losses from Cropland, Agricultural Handbook 282.

Section 2. Prime Farmland Determination. The applicant shall before making a permit application investigate the proposed permit area to determine whether lands within the area may be prime farmland.

(1) Land shall not be considered prime farmland where the applicant can demonstrate one (1) of the following:

(a) The slope of the land is ten (10) percent or greater;

(b) Other relevant factors exist, which would preclude the soils from being defined as prime farmland according to 7 C.F.R. 657, such as a very rocky surface, or the land is flooded during the growing season more often than once in two (2) years, and the flooding has reduced crop yields; or

(c) On the basis of a soil survey of lands within the permit area, there are no soil map units that have been designated prime farmland by the U.S. Soil Conservation Service.

(2) If the investigation establishes that the lands are not prime farmland, the applicant shall submit with the permit application a request for a negative determination and results of the investigation which show that the land for which the negative determination is sought meets one (1) of the criteria of subsection (1) of this section.

(3) If the investigation indicates that lands within the proposed permit area may be prime farmlands, the applicant shall contact the U.S. Soil Conservation Service to determine if a soil survey exists for those lands and whether the applicable soil map units have been designated as prime farmlands. If a soil survey exists, the applicant shall file for a positive or negative determination of prime farmland on the bases of the soil survey characteristics as interpreted in the U.S. Department of Agriculture publications referenced in Section 1 of this administrative regulation.

(4) A soil survey may be conducted by either soil scientists from the United States Department of Agriculture, Soil Conservation Service or the Kentucky Environmental and Public Protection Cabinet, Division of Conservation, who have experience and knowledge in conducting soil surveys in accordance with the standards and procedures of the National Cooperative Soil Survey program. If no soil survey has been made for the lands within the proposed permit area, the applicant shall cause such a survey to be made.

(5) Soil survey for prime farmland determination shall include the following and any other data deemed necessary by the cabinet:

(a) Location of permit boundaries, flood frequency data, water table, erosion characteristics, permeability and other information needed to make the prime farmland determination in accordance with the prime farmland definition in Section 1 of this administrative regulation;

(b) The map must also delineate the exact location and extent of prime farmland;

(c) A detailed description of each soil mapping unit in the permit area; and

(d) A detailed soil description of the representative soil of each soil mapping unit in the permit area.

(6) Positive prime farmland determination. When a soil survey of the acreage within the proposed permit area contains soil mapping units which have been designated as prime farmlands, the applicant shall submit an application, in accordance with 405 KAR 30:130, Section 6(5) for such designated land and must meet the requirements of Sections 3 through 9 of this administrative regulation.

(7) Negative prime farmland determination. When a soil survey of the acreage within the proposed permit area contains soil mapping units which have not been designated as prime farmland after review by either the United States Department of Agriculture, Soil Conservation Service or Kentucky Environmental and Public Protection Cabinet, Division of Conservation soil scientist, the applicant shall submit with the permit application a request for negative determination. The applicant shall then submit an application, in accordance with 405 KAR 30:130, Section 6(8) for such nondesignated prime farmland permits and must meet the requirements of 405 KAR 30:290 and 405 KAR 30:400.

Section 3. Restoration Plan for Prime Farmland Areas. The applicant shall submit to the cabinet a plan for the mining and restoration of any prime farmland within the proposed permit boundaries. This plan shall be used by the cabinet in judging the technological capability of the applicant to restore prime farmlands. The plan shall include the following and any other data required by the cabinet:

(1) Information contained in the soil survey as required in Section 2 of this administrative regulation;

(2) A description of the original undisturbed soil profile, as determined from the soil survey of the permit area, showing the depth and thickness of each of the soil horizons to be removed, stored, and replaced in accordance with Sections 6, 7, and 8 of this administrative regulation;

(3) The location of areas to be used for the separate stockpiling of the soil horizons and plans for soil stabilization during stockpiling;

(4) The proposed method and type of equipment to be used for removal, storage, and replacement of the soil;

(5) Plans for seeding or cropping the final graded mine land and the conservation practices to control erosion and sedimentation during the first twelve (12) months after regrading is completed. Proper adjustments for seasons must be made so that final graded land is not exposed to erosion during seasons when vegetation or conservation practices cannot be established due to weather conditions; and

(6) Separate small areas of prime farmland located in the permit boundary may be combined and restored as one larger manageable prime farmland area upon the approval of the cabinet. The number of prime farmland acres restored must be at least equal the number of prime farmland acres disturbed.

Section 4. Restoration Plan Approval and Consultation. The cabinet will evaluate each proposed prime farmland mining restoration plan to assure the following:

(1) The applicant has the technological capability to restore the prime farmland within the proposed permit area, within a reasonable time, to equivalent or higher levels of yield as nonmined

prime farmland in the surrounding area under equivalent levels of management; and

(2) Will achieve compliance with the standards of Section 5 of this administrative regulation.

(3) Before any permit is issued for areas that include prime farmlands, the cabinet shall consult with the United States Soil Conservation Service and Kentucky Division of Conservation or other agencies to provide a review of the proposed method of soil reconstruction and comment on possible revisions that will result in a more complete and adequate restoration.

Section 5. Special Requirements. Oil shale operations conducted on prime farmland areas shall meet the following requirements:

(1) Soil materials to be used in the reconstruction of the prime farmland soil shall be removed before drilling, blasting, or mining, in accordance with Section 6 of this administrative regulation and handled in a manner that prevents mixing, compacting, or contaminating these materials with less desirable materials. Where removal of soil materials results in erosion or increased storm-water run-off that may cause air and water pollution, the permittee shall take appropriate action as approved by the cabinet to control erosion or storm-water run-off from freshly exposed soil materials.

(2) Soil productivity will be restored to support equivalent or higher levels of yield as equally managed nonmined prime farmland of the same soil type in the surrounding area.

Section 6. Soil Removal. Oil shale operations on prime farmland shall be conducted to:

(1) Remove separately the entire A horizon, B horizon, C horizon, a combination of B horizon and underlying C horizon, or other favorable soil material which will create a final soil having an equal or greater productive capacity than that which existed prior to mining.

(2) The minimum depth of soil and soil material (A horizon, B horizon, C horizon, a combination of B horizon and underlying C horizon, or other favorable soil materials) to be removed for use in reconstruction of prime farmland soils shall be sufficient to meet the soil replacements standards in Section 8 of this administrative regulation.

Section 7. Soil Stockpiling. If not utilized immediately, the A horizon, B horizon, or other suitable soil materials specified in Section 6 of this administrative regulation shall be stored separately from each other and from soil. The stockpiles must be placed within the permit area and where they will not be disturbed or exposed to erosion by water or wind before the stockpiled horizons can be redistributed on terrain graded to final contour. Stockpiles in place for more than thirty (30) days shall be protected. Measures to accomplish this can be either of the following:

(1) An effective cover of nonnoxious, quick-growing annual and perennial plants, seeded or planted during the first normal period after removal for favorable planting conditions; or other methods demonstrated to and approved by the cabinet to provide equal protection.

(2) Stockpiling of separate soil horizons shall also meet the requirements of 405 KAR 30:290, Section 3, with regard to storage of topsoil.

(3) Unless approved by the cabinet, stockpiled soil and other materials shall not be moved until required for redistribution on a regraded area.

Section 8. Soil Replacement. Oil shale operations on prime farmland shall be conducted according to the following:

(1) The minimum depth of soil and soil material to be reconstructed for prime farmland shall be forty-eight (48) inches, or a depth equal to the depth of a subsurface horizon in the natural soil that inhibits root penetration, whichever is shallower. The cabinet shall specify a depth greater than forty-eight (48) inches wherever necessary to restore productive capacity due to favorable soil horizons at greater depths. Soil horizons shall be considered as inhibiting root penetration if

their densities, chemical properties, or water supplying capacities restrict or prevent penetration by roots of plants common to the vicinity of the permit area and can be proven to have little or no beneficial effect on soil productive capacity. However, in the case of a fragipan, if it can be shown that destruction of the fragipan material during soil removal proves beneficial and as a result is beneficial to plant growth, fragipan destruction will be allowed.

(2) Replace soil material only on land which has first been returned to final grade and scarified according to 405 KAR 30:390, unless site-specific evidence is provided and approved by the cabinet showing that scarification will not enhance the capability of the reconstructed soil to achieve equivalent or higher levels of yield.

(3) Soil replacement starts with those soil horizons in the reverse order in which they were removed and stockpiled. The replacement of each soil horizon or other suitable soil material shall be done in such a manner that avoids excessive compaction.

(a) Replace the C horizon material or other suitable material approved for use as specified in Section 6(1)(a) and (b) of this administrative regulation to the thickness needed to meet the requirements of subsection (1) of this section.

(b) Replace the B horizon material or other suitable material approved for use as specified in Section 6(1)(a) and (b) of this administrative regulation to the thickness needed to meet the requirements of subsection (1) of this section.

(c) Replace the A horizon material or other suitable material approved for use as specified in Section 6(1)(a) and (b) of this administrative regulation as the final surface soil layer. This surface soil layer shall equal or exceed the thickness of the original soil A horizon.

(4) The replacement of all soil horizons shall be done in a manner which prevents excessive compaction of the soil. Permeability shall not be less than the permeability rate existing in the original soil or less than 0.06 inches per hour in the upper twenty (20) inches of the reconstructed soil profile, whichever permeability rate is lower.

(5) After the reconstruction of the soil profile is complete the soil shall be protected in such a manner to prevent erosion from wind and water before it is seeded or planted.

(6) Apply nutrients and soil amendments as needed to establish quick vegetative growth.

Section 9. Revegetation. Each permittee who conducts oil shale operations on prime farmland shall meet the following revegetation requirements during reclamation:

(1) Following soil replacement, the permittee shall establish a vegetative cover capable of stabilizing the soil surface with respect to erosion. All vegetation shall be in compliance with the plan approved by the cabinet under Section 3 of this administrative regulation, and carried out in a manner that encourages prompt vegetative cover and recovery of productive capacity. The timing and mulching provisions of 405 KAR 30:400, Sections 3 and 4, shall be met.

(2) The period of liability under the performance bond for prime farmland areas shall be for not less than seven (7) years. The liability period begins at the last time of substantially augmented seeding necessary to ensure successful revegetation.

(a) For the purposes of erosion control and soil reconstruction, during the first two (2) or three (3) growing seasons, grasses and legumes will be allowed upon the approval of the cabinet.

(b) If crop comparisons are to be used to demonstrate successful restoration of prime farmland, the remaining four (4) or five (5) years must be used for crops commonly grown, such as corn, soybeans, grain, sorghum, wheat, oats, barley, or other crops on surrounding prime farmland. Crops may be grown in rotation with hay or pasture crops as long as the crop shows equal or higher yields as compared to other rotation crops on surrounding prime farmland.

(c) If a soil survey is to be used to demonstrate successful restoration of prime farmland, the prime farmland area should be maintained in vegetation in accordance with 405 KAR 30:400, until the cabinet has determined if the prime farmland has been restored successfully under subsection

(3)(a) of this section.

(3) Success of prime farmland restoration. Soil productivity shall be restored to support equivalent or higher levels of yield as nonmined prime farmland of the same soil type in the surrounding area under equivalent levels of management. Successful restoration of soil productivity shall be demonstrated by either:

(a) A soil survey of the restored permit area. The soil survey must meet the standards of and be conducted by an individual with experience and knowledge of the standards and procedures of the National Cooperative Soil Survey and in accordance with the procedures set forth in United States Department of Agriculture Handbooks 436 (Soil Taxonomy, 1975) and 18 (Soil Survey Manual, 1951). In addition, the cabinet may require other chemical and physical data, laboratory test and information to evaluate soil productivity of the permit area. The cabinet shall make the determination on the success of restoration of prime farmland areas after consultation with United States Soil Conservation Service, Kentucky Division of Conservation, and other appropriate agencies; or

(b) A comparison of actual average annual crop production on the restored area for three (3) consecutive years prior to bond release, with predetermined estimated average annual yields (target yields) of similar crops on nonmined prime farmland of the same soil type in the surrounding area under equivalent levels of management. The cabinet, in consultation with other appropriate agencies, shall develop the predetermined target yields for prime farmland soils for the area, in which crop comparison shall be evaluated to determine that the soil productivity has been restored. (8 Ky.R. 119; 480; eff. 3-1-1982; 9 Ky.R. 960; eff. 10-5-1983; TAm eff. 8-9-2007; Crt eff. 7-3-2018.)